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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/801,637

03/17/2004

Soryu Nakayama

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EXAMINER

LEE, CYNTHIA K

ART UNIT

PAPER NUMBER

1745

MAIL DATE

DELIVERY MODE

07/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/801,637

Applicant(s)

NAKAYAMA ET AL.

Examiner

Cynthia Lee

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) 4-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

This Office Action is responsive to the amendment filed on 5/21/2007. Claim 2 has been canceled. Claims 1 and 3-7 are pending. Claims 4-7 are withdrawn from further consideration as being drawn to a non-elected invention. Claim 1 has been amended. Applicant's arguments have been fully considered and are persuasive and 35 USC 102 rejection has been overcome. However, upon further consideration, the instant claims are rejected under new grounds of rejections and thus, claims 1 and 3 are finally rejected for reasons necessitated by applicant's amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as obvious over Kasahara (JP 2001-291509).

Kasahara discloses a nickel metal hydride battery comprising a negative electrode manufactured by filling or coating support body with a paste whose main component is powder of an alloy for hydrogen storage wherein the surface of the hydrogen storage alloy negative electrode is coated with a solution in which a water repellent fluororesin is mixed with an organic solvent and the fluororesin is made to be in a dispersion state in the organic solvent, while giving ultrasonic vibrations. (Refer to Kasahara's Abstract, claims 1-6) Kasahara further discloses that the amount of

Art Unit: 1745

fluororesin powder applied to the front face of a hydrogen storing metal alloy negative electrode is a nickel hydrogen battery which is 0.10-2.0 mg/cm² (applicant's claim 3).

The Examiner notes that the limitation "single particle state" in claim 1 is met by a process in which the fluororesin powder is mixed and dispersed in ultrasonic mixing as supported by the Specification pg 14.

Kasahara discloses that the fluororesin powder size is in the range of 5-100 μm (see Kasahara's claim 5), and does not disclose a particle diameter of 0.05-1.0 μm . However, Kasahara discloses that the specific surface area of a fluororesin is increased by applying the fluororesin dispersed in an organic solvent onto the negative electrode in the form of a fine powder [0033]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the specific surface area (related to the particle size) for the benefit of increasing the surface area, and hence the binding sites, of the fluororesin. Kasahara discloses that the specific surface area of a fluororesin is increased by applying the fluororesin dispersed in an organic solvent onto the negative electrode in the form of a fine powder, thus clearly teaching that the size of the powder is a result effective variable. It has been held by the courts that discovering an optimum value or workable ranges of a result-effective variable involves only routine skill in the art, and thus not novel. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). See MPEP 2144.05.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as obvious over Kasahara (JP 2001-291509) in view of Yamana (US 6068921).

Kasahara discloses a nickel metal hydroxide battery comprising a negative electrode manufactured by filling or coating support body with a paste whose main component is powder of an alloy for hydrogen storage wherein the surface of the hydrogen storage alloy negative electrode is coated with a solution in which a water repellant fluoro-resin is mixed with an organic solvent and the fluoro-resin is made to be in a dispersion state in the organic solvent, while giving ultrasonic vibrations. (Refer to Kasahara's Abstract, claims 1-6) Kasahara further discloses that the amount of fluoro-resin powder applied to the front face of a hydrogen storing metal alloy negative electrode is a nickel hydrogen battery which is 0.10-2.0 mg/cm² (applicant's claim 3).

The Examiner notes that the limitation "single particle state" in claim 1 is met by a process in which the fluoro-resin powder is mixed and dispersed in ultrasonic mixing as supported by the Specification pg 14.

Kasahara discloses that the fluoro-resin powder size is in the range of 5-100 μm (see Kasahara's claim 5), and does not disclose a particle diameter of 0.05-1.0 μm . However, Kasahara discloses that the specific surface area of a fluoro-resin is increased by applying the fluoro-resin dispersed in an organic solvent onto the negative electrode in the form of a fine powder [0033]. Further, Yamana teaches carbon fluoride particles in which an average particle size is 0.01 to 50 μm . These particles have excellent dispersibility and powder flowability. It can be used in nickel/hydride storage batteries. See Abstract. It would have been obvious to one of ordinary skill in the art at the time

Art Unit: 1745

the invention was made to make the carbon fluoride particles of the size as taught by Yamana for the benefit of attaining excellent dispersibility.

Response to Arguments

Applicant's arguments filed with respect to the particle size have been fully considered but they are not persuasive. Applicants argue that JP '509 cannot provide a single particle dispersion effect having a smaller size as presently claimed. Applicants use ultrasonic vibration method, whereas the Applicants use ultrasonic homogenizer to make the reduced size particles.

The Examiner remains unpersuaded because one of ordinary skill in the art would have known how to make the particles of the size claimed by the Applicants. For example, refer to Example 37 of Yamana (US 6068921, example 37), which also uses an ultrasonic homogenizer to disperse fluoride particles.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 1745

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER